

THAT WHICH IS CLAIMED IS:

1. Wideband speech encoding method in which the speech is sampled in such a way as to obtain successive voice frames each comprising a predetermined number of samples, and with each voice frame are
5 determined parameters of a code-excited linear prediction model, these parameters comprising a long-term excitation digital word (v_i) extracted from an adaptive coded directory (LTD), and an associated long-term gain (G_a), as well as a short-term excitation word
10 (c_j) extracted from a fixed coded directory (STD) using linear prediction digital filtering (PF), and an associated short-term gain (G_c), and the adaptive coded directory is updated on the basis of the extracted long-term excitation word and of the extracted short-
15 term excitation word, characterized in that the method comprises an updating of the state of the linear prediction filter (PF) with the short-term excitation word filtered by a filter of order greater than or equal to 1 (FLT1) whose coefficients depend on the
20 value of the long-term gain, in such a way as to weaken the contribution of the short-term excitation when the gain of the long-term excitation is greater than a predetermined threshold.

2. Method according to Claim 1, characterized in that the predetermined threshold is equal to 0.8.

3. Method according to Claim 2, characterized in that the filter (FLT1) is of order 1 and its transfer function equal to $B_0 + B_1 z^{-1}$, in that

the first coefficient B_0 of the filter is equal to
5 $1/(1+\beta.\min(Ga,1))$, and the second coefficient B_1 of the
filter is equal to $\beta.\min(Ga,1)/(1+\beta.\min(Ga,1))$, where β
is a real number of absolute value less than 1, Ga is
the long-term gain and $\min(Ga,1)$ designates the minimum
value between Ga and 1.

4. Method according to one of the preceding
claims, characterized in that the extraction of the
long-term excitation word is performed using a first
perceptual weighting filter (PWF1) comprising a first
5 formantic weighting filter, in that the extraction of
the short-term excitation word is performed using the
first perceptual weighting filter (PWF1) cascaded with
a second perceptual weighting filter (PWF2) comprising
a second formantic weighting filter, and in that the
10 denominator of the transfer function of the first
formantic weighting filter is equal to the numerator of
the second formantic weighting filter.

5. Method according to Claim 4,
characterized in that it comprises an updating of the
state of the two perceptual weighting filters (PWF1,
PWF2) with the short-term excitation word filtered by
5 the said filter of order 1.

6. Wideband speech encoding device
comprising

- sampling means able to sample the speech
in such a way as to obtain successive voice frames each
5 comprising a predetermined number of samples,
- processing means able with each voice
frame, to determine parameters of a code-excited linear

prediction model, these processing means comprising
first extraction means (MEXT1) able to extract a long-
10 term excitation digital word from an adaptive coded
directory and to calculate an associated long-term
gain, and second extraction means (MEXT2) able to
extract a short-term excitation word from a fixed coded
directory and to calculate an associated short-term
15 gain, and

first updating means (UPD) able to
update the adaptive coded directory on the basis of the
extracted long-term excitation word and of the
extracted short-term excitation word, characterized in
20 that the first extraction means comprise a linear
prediction digital filter (PF), and in that the device
comprises second updating means (UPD2) able to perform
an updating of the state of the linear prediction
filter with the short-term excitation word filtered by
25 a filter (FLT1) of order greater than or equal to 1
whose coefficients depend on the value of the long-term
gain, in such a way as to weaken the contribution of
the short-term excitation when the gain of the long-
term excitation is greater than a predetermined
30 threshold.

7. Device according to Claim 6,
characterized in that the predetermined threshold is
equal to 0.8.

8. Device according to Claim 7,
characterized in that the filter (FLT1) is of order 1
and its transfer function equal to $B_0 + B_1 z^{-1}$, in that
the first coefficient B_0 of the filter is equal to
5 $1/(1 + \beta \cdot \min(G_a, 1))$, and the second coefficient B_1 of the

filter is equal to $\beta \cdot \min(Ga, 1) / (1 + \beta \cdot \min(Ga, 1))$, where β is a real number of absolute value less than 1, Ga is the long-term gain and $\min(Ga, 1)$ designates the minimum value between Ga and 1.

9. Device according to one of Claims 6 to 8, characterized in that the first extraction means comprise a first perceptual weighting filter (PWF1) comprising a first formantic weighting filter, in that
5 the second extraction means comprise the first perceptual weighting filter cascaded with a second perceptual weighting filter (PWF2) comprising a second formantic weighting filter, and in that the denominator
10 of the transfer function of the first formantic weighting filter is equal to the numerator of the second formantic weighting filter.

10. Device according to Claim 9, characterized in that the second updating means are able to perform an updating of the state of the two perceptual weighting filters with the short-term
5 excitation word filtered by the said filter of order 1.

11. Terminal of a wireless communication system, characterized in that it incorporates a device according to one of Claims 6 to 10.

12. Terminal according to Claim 11, characterized in that it forms a cellular mobile telephone.